

Division of Behavioral and Social Sciences and Education

**Board on Science Education 20th Anniversary Monthly Celebration:
Evaluating the Impact and Mapping Future Directions of Discipline-Based
Education Research**

Participant Biographies



NANEH APKARIAN is an Assistant Professor at Arizona State University, in the School of Mathematical and Statistical Sciences. Her research centers around improving postsecondary STEM education through systemic transformation grounded in local contexts and cultures. She has been part of several mixed-methods national studies of postsecondary STEM education, including instructional practices, faculty beliefs, program structure, departmental culture, and student experiences. Throughout all her work, Dr. Apkarian takes a systems-view of postsecondary STEM to understand the present and work toward a more inclusive future that improves the lived experiences of those embedded in the system. Dr. Apkarian holds a BA in mathematics (Pomona College), MA in mathematics (UC San Diego), and Ph.D. in mathematics education (San Diego State & UC San Diego); she was a postdoctoral research associate on an interdisciplinary NSF-funded study of the uptake of research-based instructional practices among chemistry, mathematics, and physics instructors prior to joining ASU. She played varsity water polo in college and continues to regularly compete in high-level competitions.

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CHARLES HENDERSON is a Distinguished Professor at Western Michigan University (WMU), with a joint appointment between the Physics Department and the WMU Mallinson Institute for Science Education. He is the Director of the Mallinson Institute and co-Founder and co-Director of the WMU Center for Research on Instructional Change in Postsecondary Education (CRICPE). His research program focuses on understanding and promoting change in higher education, with an emphasis on improving undergraduate STEM instruction. Dr. Henderson's work has been supported by nearly \$11M in external grants and has resulted in many publications (see <https://sites.google.com/view/chenderson>). He is a Fulbright Scholar and a Fellow of the American Physical Society. Dr. Henderson is the senior editor for the journal *Physical Review Physics Education Research* and has served on two National Academy of Sciences Committees: Undergraduate Physics Education Research and Implementation, and Developing Indicators for Undergraduate STEM Education.



STANLEY M. LO is a Teaching Professor (with tenure) of Cell and Developmental Biology and Affiliate Faculty in the Joint Doctoral Program in Mathematics and Science Education and the Research Ethics Program at University of California San Diego. Collaborative projects in his research group examine how faculty conceptions of diversity inform their instructional and mentoring practices, explore how student identities intersect with their experiences and learning, and develop innovative programs to support transfer student success in STEM. Dr. Lo earned his B.S. and M.S. in Molecular Biophysics and Biochemistry from Yale University and Ph.D. in Biochemistry from Harvard University. He completed postdoctoral training in

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Biochemistry at Weill Cornell Medical College and was a Senior Research Associate in Learning Sciences at the Searle Center for Advancing Learning and Teaching at Northwestern University prior to joining University of California San Diego. He is currently on editorial boards for the journals CBE-Life Sciences Education and CourseSource and was a National Academies Education Fellow and Mentor in Life Sciences in 2011-2016, member of the Steering Committee at the National Institute on Scientific Teaching in 2016-2018, founding Communications Officer for the Research Interest Group in Contemporary Methods for Science Education Research at the National Association for Research in Science Teaching in 2014-2020, President of the Society for the Advancement of Biology Education Research in 2021-2022, and Chair of the Gordon Research Conference on Undergraduate Biology Education Research with the theme of “A New Vision for Change: Re-imagining Biology Education Through Social Justice” in 2023.

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TATIANE RUSSO-TAIT is an Assistant Professor in the Cellular Biology department at the University of Georgia, where she leads the Advancing Critical Consciousness, Equity, and Social Justice in STEM (ACCESS) Lab. She earned a B.A. in cell biology from the University of Hawai'i at Hilo, an M.S. in stem cell biology at San Francisco State University, and a PhD in STEM Education from the University of Texas at Austin. Her lab engages in interdisciplinary and collaborative research projects, using critical frameworks and mixed methodologies to examine equity and justice issues K-20 STEM education. Her research currently involves three strands: understanding current and future scientists' equity-related beliefs and practices and supporting their critical consciousness development; highlighting the experiences and perspectives of students from marginalized backgrounds in STEM learning environments; and science and social justice curriculum and instruction. Her commitment for conducting this work is motivated by the need to understand and ultimately disrupt inequity and injustice in STEM education, so that the field can move away from dehumanizing and exclusionary practices and become a space where students from marginalized backgrounds can bring their full, authentic selves and succeed in reaching their goals without contending with unjust systemic barriers.

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SUSAN RUNDELL SINGER is an experienced national and institutional leader in higher education, uplifting the value of a liberal arts education. She is St. Olaf College's president and was Vice President for Academic Affairs and Provost at Rollins College. Previously, she led the Division of Undergraduate Education at the National Science Foundation (NSF) and was the Laurence McKinley Gould Professor of Biology at Carleton College, where she directed the Perlman Center for Learning and Teaching. Recruited to NSF, she was charged with implementing holistic, evidence-informed approaches to increase the persistence and success of all undergraduates. She led 14 federal agencies in achieving the undergraduate goals of the first Federal STEM Education 5-year Strategic Plan, including producing one million more STEM graduates by 2018. Her work integrates higher education and science aimed at improving undergraduate education at scale. Her scholarship focuses on partnerships and networks of organizations collaboratively advancing undergraduate STEM education, with an emphasis on diversity, equity, inclusion, and belonging. Equitable and excellent undergraduate education is a signature element of her successes at Carleton, NSF, national organizations, Rollins, and St. Olaf, enhanced by a strong track record with partnerships and fundraising. An American Association for the Advancement of Science (AAAS) Fellow, and Senior Scholar for the Association of American Universities, Susan has received national education awards. She chairs the National Academies of Science, Engineering, and Medicine (NASEM) Board on Science Education. She chaired several NASEM studies, including Discipline-based Education Research. Her Ph.D. is in Biology from Rensselaer Polytechnic Institute.

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HEIDI SCHWEINGRUBER (Moderator) is the director of the Board on Science Education at the National Academies of Sciences, Engineering, and Medicine. She oversees a portfolio of work that includes K-12 science education, informal science education, and higher education. Dr. Schweingruber joined the staff of the board in 2004 as a senior program officer. In this role, she directed or co-directed several projects including the study that resulted in the report *A Framework for K-12 Science Education* (2012), the blueprint for the Next Generation Science Standards. Dr. Schweingruber is a nationally recognized leader in leveraging research findings to catalyze improvements in science and STEM education policy and practice. She also previously served on the faculty of Rice University and as the director of research for the Rice University School Mathematics Project, an outreach program in K-12 mathematics education. She has a Ph.D. in psychology (developmental) and anthropology and a certificate in culture and cognition, both from the University of Michigan